ON SCENE

THE NATIONAL MARITIME SAR REVIEW

DEPARTMENT OF TRANSPORTATION
U.S. COAST GUARD ISSUE No. 3-80

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MEDEVAC Report Forms (CG-5214)

By CDR A. M. Steinman
Chief, Special Medical Operations Branch

The MEDEVAC Report, which you EMTs and HMs have been sending me since March of this year, have proved extremely useful in letting us in Headquarters know what kind of cases you're treating and how well your're doing as emergency medical personnel. Believe it or not, before the MEDEVAC Report Form was published, the Coast Guard had no good way of counting or evaluating the types of MEDEVACs or the kind of treatment given by EMTs and hospital corpsmen. Commandant Instruction 16135.3 dated 14 April 80 now requires that responding medical personnel (EMTs, HMs, physicians assistants and physicians) fill out a MEDIVAC Report on each patient handled in a SAR case. The first report officially filed was from MK2 John SPENCER of CGS Stillpond, MD on March 3, 1980. Since then, I have received 127 more.

In looking at all the data sent in, I am impressed with the variety of medical problems handled and with the quality of medical care given. Of the 128 cases reviewed, 90 were from EMTs and 38 were from HMs. 80 were from Coast Guard stations, 36 from air stations, and 12 were from patrol boats or cutters. There were 62 cases of trauma (ranging from simple soft tissue injuries to multiple open fractures and head injuries), 15 cases of heart problems, 6 cases of respiratory difficulty, 7 cases of strokes or seizures, 10 cases of abdominal problems, 10 hypothermia cases, 1 near-drowning, 1 case of insulin reaction, and 16 miscellaneous problems. 8 patients required CPR, 27 required oxygen, and 57 required splinting or the application of dressings and bandages. 24 cases required only mointering of the patient and transportation. There were 6 cases in which lives were saved as a direct result of the EMT's or HM's treatment, and there were 21 other cases in which the medical treatment prevented the patient from getting worse or suffering more severe injuries. 6 of the cases involved emergency care to Coast Guard personnel (including one of the lives saved!).

ON SCENE is a SAR publication published by the Commandant, U. S. Coast Guard as a source of information concerning current and proposed procedures as well as new developments in SAR. Articles contained herein are non-record and non-directive.

There are three good reasons why you should take care when filling out the MEDVAC Report form. First, it serves as a record of what you did for the patient and in what condition you delivered him. Second, the form serves as an aid in performing your secondary survey and as a reminder to frequently monitor the patient's vital signs. Finally, it allows us to evaluate the number and types of MEDEVACs performed, so we can modify the curricula at the EMT and HM schools (if necessary) and so we can provide you with better medical equipment to do the job. As some of you know, I sometimes call your station to discuss a particular case with you. Usually it's to complement you on a case well-handled; sometimes it's to get more information about the case, particularly if it looks like you saved the patient's life; sometimes it's to suggest different ways in which you might have handled the patient. In the process I find out what problems you might be having with the medical gear, keeping up with new information in medical care, etc.

Most of you are filling out the form correctly, since the blanks on the form are pretty much self-explanatory. The first copy of the form should go with the patient to the ambulance or hospital. This allows the hospital to know how the patient did before he arrived, what was happening to his vital signs, the nature and extent of his injuries, etc. The second copy is kept at your station for record keeping purposes. The third copy (already stamped and addressed) is sent to me; merely fold the form in half, tape or staple the bottom edge, and drop it in the mail.

A few items on the form need to be explained so we can standardize the information throughout the Coast Guard.

1) Rescue Vehicle - Always fill in this blank; use the number of your boat (e.g. CG 41448), the name of your vessel (e.g. CGC POINT ARENA) the type and number of aircraft), (e.g. HH3F 1430), or state the type of motor vehicle used. If you respond to a case, treat the patient but don't MEDEVAC him, state "none" in this blank and explain in the "Remarks" section.

MEDEVAC REPORT

☒ Male ☐ Female Age 30 Date 18 May 80 Rescue Vehicle CG 41360

Name John Doe Nature of Emergency Fell down ship's ladder

Location 55 miles E. of Barnegat Previous Illness None Medication None

Allergies None Inlet Physician ? Condition on Delivery Satisfactory

Delivered to Point Pleasant Hosp. Remarks Pat. had little blood loss from fracture

PHYSICAL FINDINGS:

STATE OF CONSCIOUSNESS

	ALERT	CONSCIOUS BUT CONFUSED	UNCONSCIOUS, RESPONSIVE	UNCONSCIOUS, UNRESPONSIVE
Time	2245			
Time	0030			
Time	0145			
Time	0250			

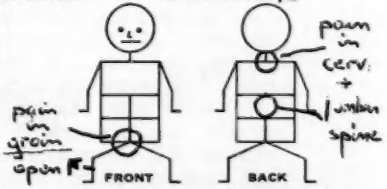
PUPILS

	EQUAL & REACTIVE	UNEQUAL	CONSTRICTED	DILATED & UNREACTIVE
Time	2245			
Time	0030			
Time	0145	slow to react and lack-lustre		
Time	0250			

SKIN COLOR

☒ Normal 0030 ☐ Cyanotic

☐ Pale/Ashen ☒ Flushed 2245



F –fracture H–hemorrhage
B –burns L–laceration
TK–tourniquet S–soft tissue injury

VITAL SIGNS

TIME	PULSE	RESPIRATION NO.	RESPIRATION QUALITY	BLOOD PRESSURE
2245	52	17	occ. pain	110 by palpation
0030	80	28	with	120 "
0145	84	24	shallow	122 "
0250	78	26	breaths	120 "

CHECK CARE GIVEN

☐ Airway Cleared	☐ MAST
☐ Airway Inserted	☐ CPR
☒ Cervical Collar	☐ O.B.
☐ Esoph. Airway	☐ Suction
☐ Transportation	☒ Dressings
☐ Tourniquet	☒ Splinting
☐ Oxygen (lpm)	☐ Scoop Stretcher
☐ Bag Mask	☐ Traction Splinting

96 by blankets

EMT SIGNATURE BM2 Joseph Fotschen

DUTY STATION USCG Station Barnegat, Barnegat Light, NJ

Dept. of Transp., USCG, CG-5214 (7-79) 3rd Copy – Mail as Posted S/N 7530-01-GF2-9080

2) Location - A general location is acceptable (e.g. Columbia River bar). Please don't use chart coordinates; I don't have all of your charts!

3) Nature of Emergency - Use this blank to explain why you were called to MEDEVAC the patient or to explain what happened to the patient (e.g. patient fell down ship's ladder; or chest pains - possible heart attack). Don't use this space to describe your physical findings - use the stickman for that.

4) Condition on Delivery - Use either "good," "satisfactory," or "serious".

5) Delivered to - Use this blank to describe who took over care of the patient from you (e.g. civilian ambulance, USN ambulance, etc) or where you dropped the patient off (e.g. Good Samaritan Hospital).

6) Remarks - Use this space to provide any additional information you feel is important about the patient. You can also use this space to describe any difficulties you had with equipment, treatment, etc., or to described any complications that developed while the patient was under your care. You can also use it to describe any problems you had with the rescue itself (e.g. heavy seas, difficulty hoisting, etc.) If you need more space for your remarks, and the remarks aren't necessary for either the hospital or your station's NJ. records, use the back of the third (stamped and addressed) copy. Or feel free to use any available blank space on the form.

7) State of Consiousness - Fill in the times in the appropriate spaces. This information is important, particularly for patients with head injuries, since changes in levels of consciousness are very significant.

8) Pupils - same as with state of consciousness.

9) Vital signs - This information is most important! Record the time and the result of each of the measurements made. For hypothermia patients, be sure to record the rectal temperature (or less usefully oral temperature), using the low-reading thermometer from the splint and bandage bag, in the blank space next to the blood pressure recordings.

10) Stickman - Indicate the sites of injury on the stickman using the initials listed. If a patient only has pain in a certain area, circle that area and write "pain". For burns, indicate whether the severity is "1st", "2nd", or "3rd" degree.

11) Check Care Given - These items are self-explantory. Feel free to add your comments as necessary to indicate the type of treatment given.

12) EMT (or HM) Signature - Always fill out this blank; indicate your grade and name (e.g. BM3 John Doe), and please make it legible.

Here is a sample of a correctly filled out MEDEVAC Report Form. Incidentally, it is based on (with some modifications) an actual case from CGS Barnegat, Light, NJ.

Two final thoughts - I strongly suggest you read Commandant Instruction 16135.3 titled "Emergency Medical Technicians in U. S. Coast Guard SAR Operations", since it addresses the roll of HMs and EMTs on SAR cases. Also it tells you how to obtain more MEDEVAC Report Forms. If you need some forms ASAP, you can obtain them by calling CWO Sam MANESS COMDT (G-OSR-4) at FTS 426-1918.

SPECIAL PURPOSE AIRCRAFT AS A SAR AID

Paragraphs 337 and 349 of the National SAR Manual discuss special purpose aircraft operated by the Air Force and Navy which might be useful in SAR missions if available. Not listed are some which have recently demonstrated an exceptional SAR capability or which have recently come to our attention. Information on these is supplied by this article.

AIR FORCE E-3 and NAVY E-2 AIRCRAFT

During a recent SAR case, the exceptional radar on an Air Force E-3 aircraft was put to good use. A Coast Guard search aircraft arrived on scene and began searching for a merchant vessel which had been reported sinking with the crew abandoning ship. Shortly afterwards the Coast Guard aircraft was contacted by a U.S. Air Force E-3 type aircraft, a type which is used for airborne warning and control purposes. The E-3 volunteered to assist in the search. With its outstanding capability, the E-3 was able to acquire both the Coast Guard search aircraft and surface targets on his radar and, by vectoring the Coast Guard aircraft from target to target, made it possible to investigate all surface contacts within a 75 mile radius of datum in the space of an hour and a half. Although the distress was later evaluated as a false alarm, the instance did demonstrate the outstanding capability of the E-3 aircraft in helping to detect & identify surface targets in a very short time. The Air Station noted in its narrative account that it has had occasion to work with Navy E-2 aircraft as well which have essentially the same radar capabilities and that they have found them to be an extremely useful tool. They further noted that the E-2 radar is designed to pick up very small surface

(continued on page 10)

A WORLD-WIDE SAR COMMUNICATIONS NETWORK

An international communications network, which can be used for SAR, exists today among those countries which are members of the International Civil Aviation Organization. The network is designed primarily for the safety of air navigation. Ordinarily this network serves the functions of the Air Traffic Services. However, it is also intended for use for international distress, urgency and SAR communications. All SAR Coordinators and their staffs who may become involved in international SAR activities should be aware of this network and how it can serve them.

The network is known in general as the Aeronautical Fixed Service. It is made up of two components: direct speech circuits, and teletype circuits which are commonly known as the Aeronautical Fixed Telecommunication Network (AFTN).

VOICE NETWORK

Direct speech circuits are used mainly for air traffic control. They usually extend from one Area Control Center to another, although sometimes they may link up to another type of air traffic control facility, such as a control tower. Since RCCs involved in international SAR are usually connected by a voice circuit to the Area Control Center serving their area, it is easy to see how the RCC Controller can relay voice messages through the Air Traffic Controller over these international voice circuits. A quick look at the circuits in any region can be obtained by entering the Air Navigation Plan for the region and consulting the charts and tables under the communications section.

TELETYPE NETWORK

The AFTN is a world-wide teletype network linked together by automatic, semi-automatic and torn-tape relay stations. SAR Coordinators whose RCCs require a significant amount of international hard-copy SAR communications should consider installing a direct drop into the AFTN. For those RCCs with lesser international communications needs, a pony loop into the FAA's nearest AFTN outlet may be sufficient. For those RCCs with little international traffic, arrangements with the FAA can probably be made to handle this without any teletype drop. Distress messages and distress traffic on the AFTN comprise those messages sent by mobile stations reporting that they are threatened by grave and imminent danger and all other messages relative to the immediate assistance required by the mobile station in distress. Urgency messages on the AFTN comprise messages concerning the safety of a ship, aircraft or other vehicles or of some person on board or within sight. It is easy to see that these categories cover all messages which would be required for SAR purposes. SAR personnel should realize that the AFTN provides them with a hard copy world-wide SAR communications network. As with the direct speech circuits, a quick look at the AFTN circuits in any region can be obtained by entering the Air Navigation Plan for the region, again consulting the charts and tables under the communications section.

PROCEDURES

General procedures for the aeronautical Fixed Service and specific procedures for the AFTN are found in Volume II of Annex 10 to the Convention on International Civil Aviation. With a working knowledge of the international direct speech circuits and the AFTN, SAR Coordinators, Chiefs of SAR Branches and RCC Controllers will have available to them a potent tool for coordinating SAR activities with the international community. Communications personnel, where appropriate, should be trained in the detailed procedures for using the AFTN for the transmission of SAR messages.

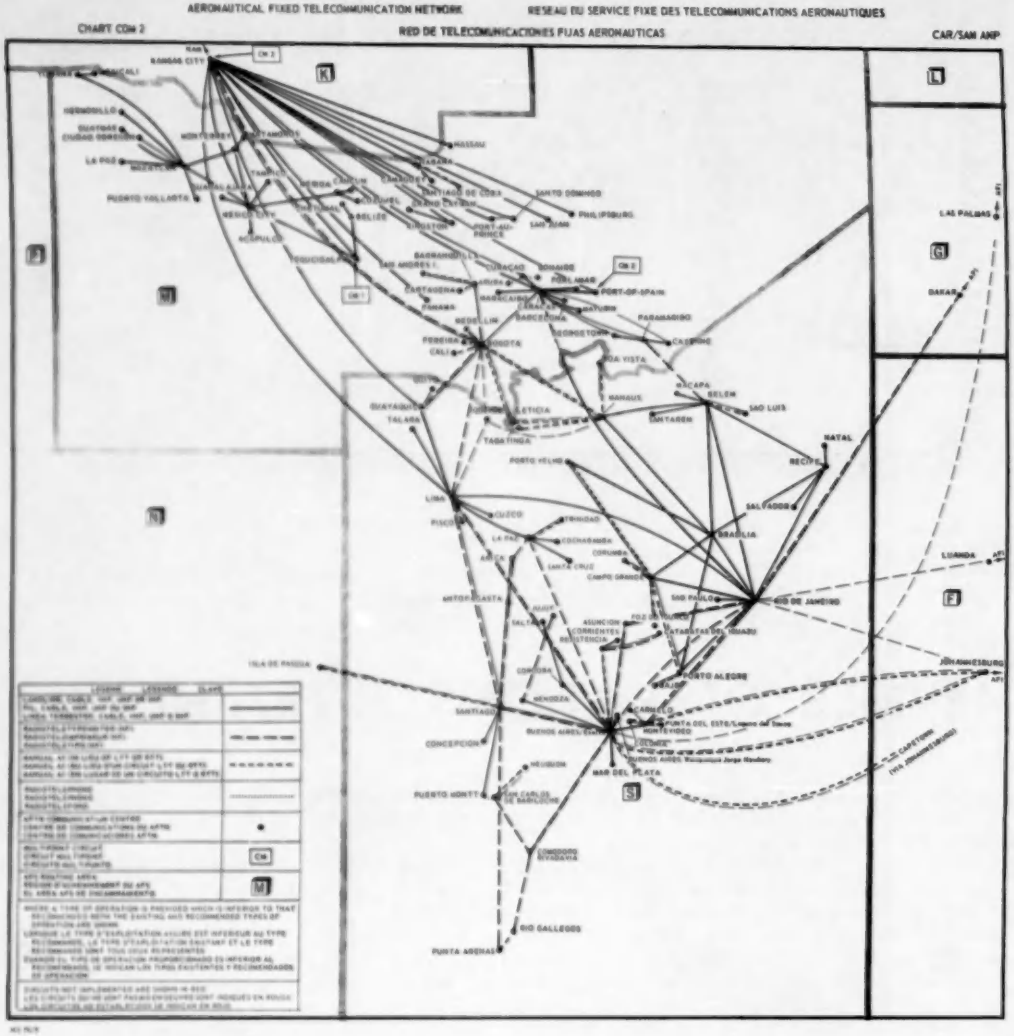
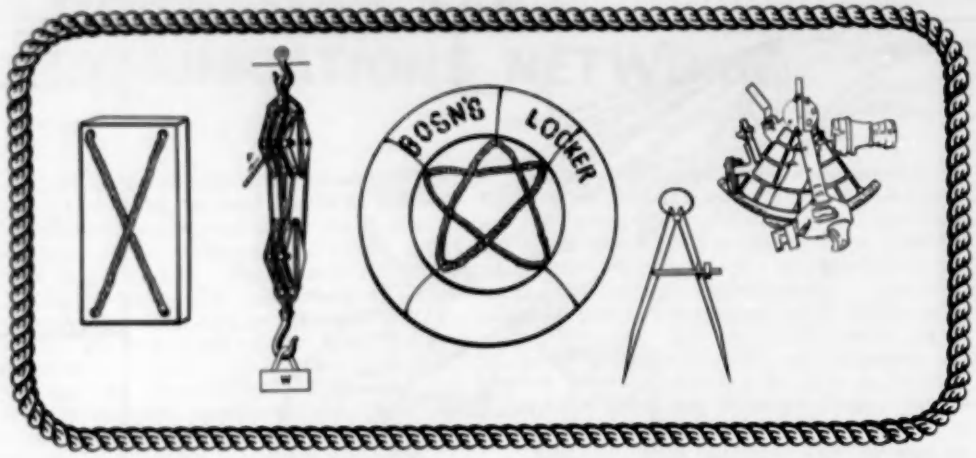


Chart COM 2 from Caribbean and South American Regions Air Navigation Plan



Editor's Note: The following two articles have been previoulsy distributed as Commandant Notices. They are repeated here because of the importance of the subject matter.

44' MLB OPERATIONS & TRAINING

Surf/bar training is a necessary, but potentially hazardous part of 44 ft. MLB Operations. In the hands of a skilled surfman, the 44 ft. MLB is capable of being operated safely in 20 ft. surf and 30 ft. seas. On the other hand, if improperly handled, the boat can be easily damaged in the curl of an 8 ft. wave. Over the past winter there was, what appeared to be, an inordinate number of MLB casualties. Some were caused by coxswains attempting to train in sea conditions beyond their capabilities; others were caused by the coxswain operating in surf conditions beyond the design capability of the boat itself. The latest accident occurred in 20-25 ft. seas, injured one crewman, caused $26,000 damage, and resulted in the loss of the boat from service for 4-6 weeks. Accidents caused by coxswains operating or training in environmental conditions beyond their knowledge and skills or beyond the boat's design is not acceptable.

In order to reduce the potential for personnel injuries and vessel damage, the following safety standards will be followed when conducting 44 ft. MLB surf/bar training:

a. The maximum persmissible surf conditions for training when the designated coxswain is fully qualified as a surfman in accordance with the Boat Crew Training Guide (G-313) is 15 feet. The surfman must remain adjacent to the throttles whenever a trainee is at the helm while in the surf.

b. The maximum permissible surf conditions for training when the designated coxswain is not fully qualified as a surfman in accordance with CG-313 is 10 ft. The coxswain must remain adjacent to the throttles whenever a trainee is at the helm while in the surf. During all surf/bar drills all persons on board shall wear safety helmets, PFDs, and be securely fastened to the boat with safety belts when operating in surf. Wet-suits are not required unless the sea water temperature is 60 degrees fahrenheit or less. PFDs are not required when using wet-suits.

It is not the intent of this notice to curtail or reduce heavy weather MLB Training. Rather, it attempts to set reasonable safety standards for the MLB training environment that will provide adequate training experience while still keeping the potential for injury and/or loss to a minimum.

POTENTIAL FOR EYE SPLICE FAILURES IN DOUBLE BRAIDED LINE

Commander Naval Sea System Command (COMNAVSEASYSCOMM) advises of recent eye splice failures in 2-1 doubled braided mooring lines. Other information indicates that there has been one fatality and one serious injury in recent months due to eye splice failures in this type of line. The failure occurred at the vertex or "X" mark of the splice as described in numerous splicing instructions. The cause of these failures was the splicing method used.

The basic priciple for splicing double braided line is that the "cover goes into the core, and then the core goes into the cover". The 16th edition of Knights Modern Seamanship (KMS) as well as previous editions of Sampson Splicing Manual (blue cover) recommend that after the core is brought back thru the cover that it be cut at the vertex or "X" mark. At this point in the splice where the core has been cut, there will be a flat spot and this leg of the splice will only be about 50 percent of the breaking strength of the original line. KMS states "although the core is cut at the fork of the eye, leaving only the cover bridging that point, the strength of the splice is not affected as long as nothing binds the eye on that side while the strain is being applied. With the legs of the eye sharing the load equally, the splice is 100 percent strong".

After analysis of recent accidents, the Navy found that if after tension is applied, the line rotates or walks around a holding device such as a bollard, bitt, or cleat, etc. a disproportionate loading can occur in the two legs of the eye splice. The difference in loading depends upon the roughness of the bollard, bitt, or cleat, and whether the line is wet or dry. A dry line on a very smooth and shiny holding device can have one leg of the splice experiencing twice as much load as the other. A wet line on a rough or rusty holding device can experience as much as 17 times as much load on one leg as the other. If the leg experiencing the higher load happens to be the leg on the splice that has the core cut at the vertex, then the line can break at half its rated breaking strength.

The most recent edition of Sampson Splicing Manual (red cover) recommends that the core be worked into the cover one half a fid length beyond the "X" mark or vertex, and states that this splice retains 100 percent of its original diameter, and about 90 percent of the strength of the rope. COMNAVSEASYSCOMM did not state what degree of strength could be expected from this new splicing method. He merely indicated that some improvement could be expected, but how much was unknown and would not be known until they had completed testing in about twelve months.

The only way that a splice may be inspected to determine if the older splicing method described in the second paragraph was used, is to feel the eye splice at the vertex for a flat spot. This flat

spot may not be readily apparent and careful inspection is required.

Double braided line is authorized for all Coast Guard cutters and boats. These units should inspect all eye splices to determine if flat spots exist. If flat spots are found, two alternatives are recommended before a heavy strain can safely be applied to the line. One, the line may be respliced using the method for "new rope" described in the latest Sampson Rope Manual (red cover). Putting an eye splice in used line using the method for "new rope" may not be very easy since used line has usually undergone shrinkage due to heat and permanent elongation from use, and it may not be possible to work the core into the cover beyond the "X" mark. A word of caution: do not use the method of splicing "used rope" in this same manual as this method also recommends cutting the core at the "X" mark much the same as the method described in the second paragraph above. If the line is respliced, it it suggested that the line be marked in such a manner to indicate that it is safe to use, and that these markings be retained until all lines have been respliced or replaced. An alternative to resplicing is to use a strain gauge on the line. Since a splice with the core cut at the "X" mark may part at 50 percent of the breaking strength of the original line, 30 percent of breaking strength is considered to be the safe working load for this type splice, 2-1 double braided nylon stretches approx 13 percent at 30 precent of breaking strength. For example, if the desired distance between marks on the relaxed line is 30 inches, then the length of the strain gauge should be 33.9 inches or approx 33 7/8 inches (30 inches + 0.13 X 30 inches = 33.9 inches or approx 33 7/8 inches).

Training commands and training teams should amend their splicing procedures accordingly.

A copy of the most recent Sampson Splicing Manual (red cover) may be obtained on a one time basis by forwarding a rapid draft letter to:

Commandant (G-OSR-1)
U. S. Coast Guard Headquarters
2100 Second Street, S.W.
Washington, D. C. 20593

SAR AID (CONT.)

contacts, such as submarine periscopes, at distances in excess of 100 nautical miles. They stated that, as a fuel-saving tool the use of the Navy E-2 and the Air Force E-3 aircraft is highly recommended.

NAVY P-3 AIRCRAFT EQUIPPED WITH FLIR

A movie film has recently been reviewed which showed the capability of Navy P-3 aircraft with Forward Looking Infra Red (FLIR) equipment installed. Such aircraft could provide a means of night search or of search during low visibility. It was stated at the time that a significant number of Navy P-2s are now equipped with FLIR.

POSSIBLE USE OF THESE SPECIAL PURPOSE AIRCRAFT.

The National Maritime SAR Program Facilities Plan (COMDTINST M16130.3) lists DOD and Coast Guard Facilities available for Maritime SAR. As part of this Plan each District SAR Officer will have to negotiate support agreements with DOD commands within their SAR area. Such special capabilities if available, should be included as information in the agreements.

As in the case with other special purpose DOD aircraft, if other means have not been directed or arranged, the Air Force RCC at Scott AFB can be called on to help in getting the assistance of E-3 or E-2 aircraft in special cases.

COMPENSATING FOR HIGH DRIFT RATE

The procedure contained in paragraph 850.b of the National SAR Manual to account for high drift rate during a search has been challenged as not efficient. A search pattern, intended as a replacement to the procedure, has been tested and used during actual SAR cases in the Seventh Coast Guard District for Gulf Stream searches. The pattern is the Parallel Track, Single unit, Drift compensated Pattern (PSD). Figure 1 shows a regular geographic plot of a Parallel Track, Single Unit (PS) pattern with legs in the direction of drift. It also shows the corresponding relative plot.

Note that, as the search field drifts during the search the PS pattern is skewed with relation to the desired field of search so that part of the field is left unsearched.

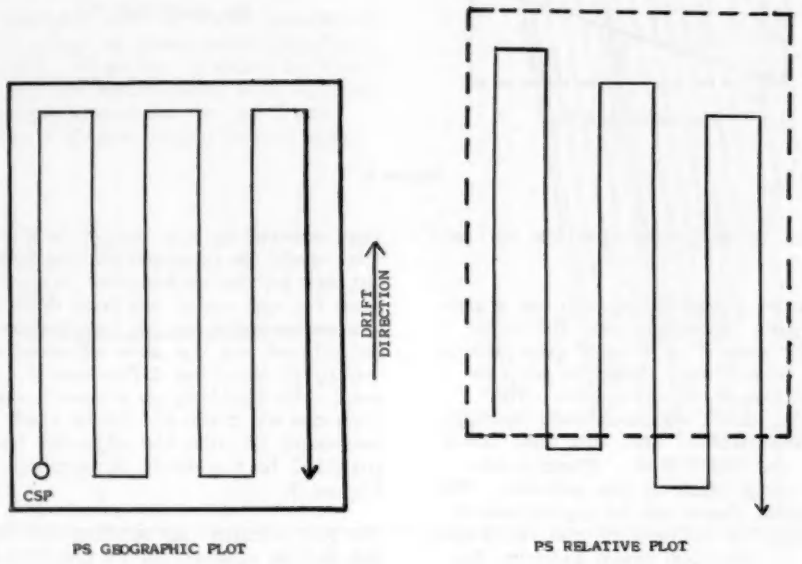


Figure 1

In order to compensate for the drift during the search, the PSD pattern is flown as shown in the geographic plot of Figure 2. The results in the relative plot as shown in Figure 2. Note that the pattern is similar to a PS pattern except that it is skewed into the shape of a parallelogram in order to compensate for the drift during the search. Skew of the crosslegs is ignored.

Now the desired field of search is covered by the desired parallel tracks as shown in the relative plot of Figure 2.

The existing procedure in paragraph 850.b of the SAR Manual calls for searching parallel to the drift direction and for a sufficient extension of the search area in the direction of drift. This too will insure that the desired field of search is

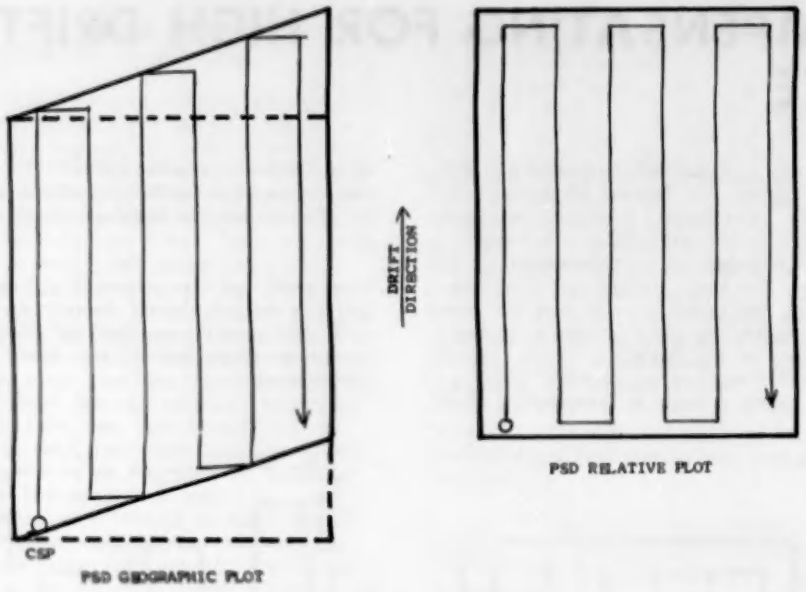


Figure 2

covered but takes longer than the PSD pattern.

When planning a search for PSD use a rectangular area is determined. The major axis of the search is aligned parallel to the drift direction. Creep is perpendicular to the drift direction. The search area, drift vector, track spacing, pattern designation, etc. are than transmitted to the SRU (SRUs). These units lay out a rough plot of the pattern. The parallelogram shape can be approximated by advancing the corners of the rectangle, which are on the down creep side in the direction of drift a distance equal to that covered by the target in the time that would be required to complete a PS pattern in the rectangular area. Once the time for one cycle has been determined, a new estimated time for completion can be calculated and the skew adjusted accordingly, if the time difference is significant. In dividing up a search when more than one aircraft are to be used, it is necessary to make the adjacent boundries parallel to the drift direction. See Picure 3.

The PSD pattern can be directed in the SAR action message as in the following example:

1. Search Areas

Area	Size	Center Point	Major Axis
A-1	72X20	27-00.0N 79-41.5W	350T
A-2	72X10	26-57.5N 79-58.0W	350T

2. Execution

Area	Unit	Parent Acty	Type	Enter	Track Spacing	Creep	Drift	Alt.
A-1	HC131	CGAS Miami	PSD	SW	2.0	080T	350T/4.5	1000
A-2	HC131	CGAS Miami	PSD	SW	2.0	080T	350T/2.6	500

Prior to departure, each navigator should plot the tracks for all search areas so that he will be prepared if his aircraft is diverted to a search area different from that originally assigned. Figure 3 shows how the geographic plot of these patterns will look if the aircraft arrive on scene on time and no diversions for sightings are made. Note that, as is common in the Gulf Stream, the drift rate is different in the two adjacent search areas. In such cases of varying rates, the average current in each area is used for planning the skew of the area. If an aircraft arrives on scene late, or makes diversions during the search, the tracks, and thus the parallelograms, can be readjusted based on the given drift.

It is important that adjacent boundaries of search areas be established parallel to the drift direction as shown in Figure 3. If they are established with adjacent boundries perpendicular to the drift direction, a flight safety hazard could result.

Figure 3

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	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
A	3		3	3	3	3	3	3	2	2	2	2	3	3		1		1	1		5	6			2	
B		5	25		25	10	40	10	3	2	2	1	2	10	1	1	1		1	1						
C	5	3		3	1	1	1	1	5	1			1	1	2	1		1	1	2	1		1			
D	1			1			1			1	1	2		1	1		1			2	2	2		2	1	1
E											1	1		1												
F		1	1							1	1		1			1										
G																										
H	1	1	1		1	1																				

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